

Sequence Listing

Applicant Data:

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Title of the Invention: *PHARMACEUTICAL PRODUCT COMPRISING TRANSGENIC POLLEN EXPRESSING HETEROLOGOUS POLYPEPTIDES*

Number of listed sequences: 4

Seq. nr. 1

Size: 1629 base pairs

Type: cDNA

Name of the gene: AtGRP17

Function: oleosin-type protein

SEQ 1: Complete sequence of the coding region of the AtGRP17 (4940-5358) + (5545-6757)

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        a ttagcagaactaaggcaa aagccatcat cagtcagtc
4981 tctgtcactg agagaggca gaaataggtt tcctttctg tccctgtcac
agagagaggg
      5041 cagattttt ctttcttat ctcttcaga gagagatgga agaaagtttt
cttttctcag
      5101 tatgttctct tttctcatgc cactgttgga gtttattaag attattattt
cttctgtggc
      5161 ctccgttaatc ttogtcggtt tcgcctgtgt aaccctcgct gtttctgccg
cagcattagt
      5221 cgtaagcacc ccggtttca tcatatttag tcctgttctc gtaccagcta
cgatagccac
      5281 gtttgtcttgcgacaggat tcacggccgg tggctttttt ggagcgacgg
cacttggct
      5341 catcatgtgg cttgttaagt aagattatta taacagctta tattgagatc
actcgagatt
      5401 tatgcttaat tatataatat tcataaacct atgtttaaa agtataattga
acttcatttg
      5461 ttaacgtact ttataaatat tgaacttcgt tcgtttctt aattggtctc
taagtatata
      5521 tacataacttt tttgtgtat gcagacgtag gatggagta aagccgaagg
ataatccacc
      5581 tccggcagga cttccaccga attcgggagc aggagcagga ggagctcaaa
gtctgatcaa
      5641 aaagtcaaaag gcaaagtcta aaggtggct taaggcttgg tgtaagaaga
tgttaaaaag
      5701 taaattcgggt gttaaaaaaag gcaagtccgg gggtgaaaaa agtaaatttg
gaggtaaagg
      5761 cgtaagtcc gaaggtgaag aaggtatgtc gtctggggat gaaggtatgt
ctggaaagtga
      5821 aggaggtatg tccggaggtg aaggaggtaa atccaaaagt ggaaaaggta
aactcaaagc
      5881 taaaactcgaa aagaaaaaaag gtatgtccgg agggtccgag agtgaagaag
gtatgtctgg
      5941 aagtgaagga ggtatgtctg gtggggagg aagtaaatcc aaaagtaaaa
aaagttaaact
      6001 caaagctaaa ttgggaaaga aaaaaggtat gtccggaggc atgtcaggaa
gtgaagaagg
      6061 tatgtctgga agtgaaggag gtatgtccag tggggaggaa agtaaatcca
aaagttaaaaa
      6121 aagtaaactc aaagctaaat tgggaaagaa aaaaggtatg tccggaggca
tgtcaggaag

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6181 tgaagaaggt atgtctggaa gtgaaggagg tatgtccgga ggtggaggag
 gtaaatccaa
 6241 aagtagaaaa agtaaactca aagctaaatt gggaaagaaa aaatgtatgt
 ccggaggcat
 6301 gtcaggaagt gaaggaggtt tgtctggaag tgaaggaggt atatccggag
 gtggtatgtc
 6361 tgggggcagt ggaagtaaac acaaaattgg aggaggtaaa cacggaggtc
 ttggaggtaa
 6421 attcgaaag aaaagaggca tgtccgaaag tgaggaggc atgtcaggaa
 gtgaaggagg
 6481 tgtgtctgga agtgaaggaa gtatgtctgg aggtggatgt tctggggta
 gcggaagtaa
 6541 acacaaaatt ggaggaggtt aacacggagg tcttagaggt aaattcggaa
 agaaaagagg
 6601 tatgtcagga agtgaaggag gtatgtctgg aagtgaagga ggtatgtcgg
 aaagtggat
 6661 gtccggagt ggaggggta aacacaaaat cggaggaggtt aaacacaaaat
 ttggaggagg
 6721 taaacacgga ggtggaggtt gccacatggc ggagtaa

Protein sequence translated from AtGRP17

MSEELSQKPSSAQSLSLREGRNRFPLSLSQREGRFFPSLSE
 RDGRKFSFLSMFSFLMPILLEVIKIIIASVASVIFVGFACVTLAGSAAALVVSTPVFII
 FSPVLVPATIATVVLATGFTAGGSFGATALGLIMWLVKRRMGVKPKDNPPPAGLPPNS
 GAGAGGAQSLIKSKAKSKGGLKAWCKMLKSFKGGKKKGKSGGGKSFKGGKGKSEGE
 EGMSSGDEMSGSEGMSGEGGSKSGKGKIKAKLEKKKGMSGGGSEEEMSGSEG
 MSGGGGSKSKSKKSLKAKLGKKKGMSGSEEGMSGSEGMSGGGGSKSKSKKSK
 LKAKLGKKKGMSGSEEGMSGSEGMSGGGGGKSRSKSLKAKLGKKCMSSGM
 SGSEGGMSGSEGGISGGGMSGGGSKHKIGGGKHGGLGGKFGKRGMSGSGGGMSGSE
 GGVSGSEGMSGGMSGGGSKHKIGGGKHGGLRGKFGKRGMSGSEGMSGSEGGMS
 ESGMSGSGGGKHKIGGGKHKGFFGGKHGGGGHMAE

Seq. nr. 2

Size: 1658 base pairs

Type: DNA

Name of the promoter: ProAtGRP17

Function: promoter

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3371      acaaagaaaat taactatgaa acaatgcttt gtttaaatga agtaattaat
            3421 cggtaactata gcgttatatac atagaatgga tccaaatttaa ccaaagcaac
tgtatgtgac
            3481 tatgtgaatg attcaatcgt gagacattga aattgtcggt tctccattac
ctttttgaa
            3541 gaaaaaccat cgaaagctag ctaagacttt ttttattaaa cgaacttgct
actatttcta
            3601 tggtttcttt gaaatgaaaa tttaatttgt tactgtttca cctaaaactc
aaaagtattg
            3661 cttttaatt ttattattaa gaaaaactaa tcttattttat gttaagaaac
ctgtcaattt
            3721 ttcattgtta atttcggctc tataattatt aattaacaat caatttctca
aaaattgcaa
            3781 tcattgattat gattagatat atattagttg gattgtgatg catttttgt
aatataaaaat
            3841 ggatgtttgt attagttct cactcatgta attaaacacc aaatgctaga
aactagtact
            3901 ttgtttctc agctctcgctc tattgttata tctgcaacac gaacaaaaac
cttatcttagg
            3961 tgttatatac cacggttatg tttatgagtt agaaggatt cttcaacaaa
aatcacgaa
            4021 ctacttgtat atatgtatgt gtgtatccga tcgaggttga cttccggggt
tggacgttga
            4081 agaagacgaa ttcattgatt gggcttataat atggcatgt attacttggt
tcaagtttgt
            4141 aacactttta gcttttcaa ttctattcga aaccaaaaata ttgggctata
tatctttata
            4201 caaccccaa gataaattgg accaattttta gaagagcaaa ttgaacccgg
ccgttagcgt
            4261 tagccaaacc ccaactcctt ttcatgtacaa tttaaatcaag aatttctaatt
aaatcgtgaa
            4321 ttcttagaca tacatatcat aatttcgtca aagcgagct acacctagtt
ttgagctaca
            4381 taactttttt ctttttttt ttatgattttt gaggtttcaa aacccttgaa
cccataattt

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4441 cttataatta gttttgtaat actaaattta ccattgagag cgacctctcg
tcactagtaa
4501 ttcaagatc tcatattcat gacctatatt aaccatctc cagtcaagta
atttcaatcg
4561 aaattcatca aaatcatata tttaacttag taatcacata tgatatggct
aatatacgta
4621 atataacgat aaagatttct tcacgcttg atattccata aagcaatgga
aatatggaat
4681 ggaagaaaac atttgaattt tacaagaaac aataaaataga aggctacaa
aacatgacaa
4741 cccacacaca cacacacgaa aagagaaaat ataaagaagg acatgtAACG
tgacgttagcg
4801 tagatctcca ttcactccaa tcgtttgca tggagcatgc atgtgtgtgt
accgtgcacg
4861 tagtagagac cacacaactc cttcataaaaa gccctcttc tcttaccatc
accaaaaacac
4921 aacaatccga tcagaaaaat

Seq. nr. 3

Size:

Type:

Name of the gene: RR1f

Function:

SEQ 3: Complete sequence of RR1f

5'ATA AAG CTT TTT CTC TGT TTT TGT CCG TGG AAC

Seq. nr. 4

Size:

Type:

Name of the gene: RR2r

Function:

SEQ 4: Complete sequence of RR2r

5'ATA CCA TGG CAC GTG ATT CGG TGG AAG TCC TGC C